

CLAIMS

- 1.- A pump having a sealing mechanism comprising: (a) a main body (1) having a
5 first surface (11), (b) a attachment body (3) having first means for attachment to a bottle
neck, (c) second means for attachment of a dip tube, (d) an inlet valve (9), (e) a second
surface (13) facing said first surface (11), where said first surface (11) and said second
surface (13) define a pumping chamber (17), and (f) a discharge valve (43) at the outlet
10 of said pumping chamber (17), where said first surface (11) and said second surface
(13) are adapted to perform a relative movement therebetween causing the pumping of
a liquid between said inlet valve (9) and said discharge valve (43), wherein said
attachment body (3) is attached to said main body (1) with possibility of a relative
displacement between an open position and a closed position and wherein said
15 attachment body (3) comprises a projection which, when said attachment body (3) and
said main body (1) are in said closed position, prevents said second surface (13) from
performing said relative movement.
- 2.- The pump of claim 1, wherein said projection is a tubular stem (27) surrounding
said inlet valve (9).
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- 3.- The pump of claim 1 or claim 2, wherein said projection is hermetically sealed
against said second surface (13) when said attachment body (3) and said main body (1)
are in said closed position.
- 25 4.- The pump of any one of claims 1 to 3, wherein said relative displacement is
greater than said relative movement.
- 5.- The pump of any one of claims 2 to 4, wherein said main body (1) comprises a
first annular lip (31) forming a hermetic seal with the outer wall of said tubular stem (27).
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6.- The pump of any one of claims 1 to 5, wherein said main body (1) comprises a second annular lip (37) forming a hermetic seal with an annular partition (35) disposed in said attachment body (3), said annular partition (35) surrounding a ventilation hole (33).

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7.- The pump of any one of claims 1 to 6, wherein: (a) it additionally comprises a head (5), where said head (5) comprises said second surface (13), where said head (5) is made from a material having elastomeric properties adapted to be resiliently deformed by a manually applied force and has an external actuation surface (15) adapted to be deformed by a user's finger, (b) said discharge valve (43) comprises a valve seat (45) and a moving member adapted to move between a first position, corresponding to said closed discharge valve (43) and in which said moving member contacts said valve seat (45), and a second position, corresponding to said open discharge valve (43), where said moving member extends from said head (5) forming a partition (41), where said moving member is integral with said head (5), and (c) when said moving member is in said first position, and there is a reduced pressure in said pumping chamber (17), said reduced pressure then exerts a force pressing said moving member against said valve seat (45).

8.- The pump of claim 7, wherein said partition (41) is a flat surface.

9.- The pump of claim 7, wherein said partition (41) is a cylindrical surface.

10.- The pump of claim 9, wherein said partition (41) is a cylinder surrounding said second surface (13).

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11.- The pump of claim 10, wherein said valve seat (45) is formed by a second also cylindrical partition (47) disposed in said main body (1), where said second partition (47) surrounds said first surface (11).

- 12.- The pump of any one of claims 7 to 11, wherein said second surface (13) is convexly curved towards the outside of said pumping chamber (17), preferably is a spherical cap.
- 5 13.- The pump of any one of claims 7 to 12, wherein said first surface (11) has a concavely curved portion towards the interior of said pumping chamber (17), preferably is a spherical portion.
- 10 14.- The pump of claim 13, wherein said curved portion and said second surface (13) make contact in the limit of the stroke followed by said second surface (13) during a pumping movement.
- 15 15.- The pump of claim 13 or claim 14, wherein said curved portion has an external rim (51) that is convex towards the interior of said pumping chamber (17).
- 16.- The pump of any one of claims 7 to 15, wherein said valve seat (45) has a rounded contact surface (53) with said moving member.
- 20 17.- The pump of any one of claims 7 to 16, wherein said moving member has a contact portion (55) with said valve seat (45) having a thickness tapering down towards the free end thereof.
- 25 18.- The pump of any one of claims 7 to 17, having at least one column (57) on said first surface (11) extending towards said second surface (13) and which is disposed at a portion proximate said discharge valve (43).
- 30 19.- The pump of claim 18, wherein said columns (57) have a height such as to contact said second surface (13) when said second surface (13) is in the extended position thereof.